## AMENDMENTS TO THE CLAIMS

Claims 1-17. (canceled)

Claim 18.     (currently amended) A wireless multicarrier transmission method, wherein a multicarrier transmission uses n modulated frequency subcarriers (n is an integer number), a fading condition of each subcarrier is detected to generate fading channel profile information; the modulation of each subcarrier is determined by the following steps:

precalculating a plurality of adaptive loading tables, each loading table containing x subcarriers for modulation with a lower modulation scheme, y subcarriers for modulation with a standard modulation scheme, and z subcarriers for modulation with a higher modulation scheme (x, y, and z are integer numbers); wherein the sum of x, y, and z is n and a resulting number of coded bits of a multicarrier symbol is constant;

selecting one of the adaptive loading tables for said multicarrier transmission; and

modulating the x subcarriers having low fading channel profile information with the lower modulation scheme, modulating the y subcarriers having medium fading channel profile information with the standard modulation scheme, and modulating the z subcarriers having high fading channel profile information with the higher modulation scheme.

Claim 19.     (previously presented) The method according to claim 18, wherein a transmission power of the subcarriers is adapted such that a total transmission power for all n subcarriers is unchanged.

-2-

00301987

Claim 20.    (previously presented)  The method according to claim 19, wherein the transmission power of subcarriers modulated with the higher modulation scheme is enhanced to compensate for subcarriers which are not modulated.

Claim 21.    (previously presented)  The method according to claim 18, wherein adaptive loading information reflecting an adaptation of the modulation scheme of the subcarriers is exchanged between a transmitter and a receiver of the multicarrier transmission.

Claim 22.    (previously presented)  The method according to claim 21, wherein the receiver calculates an adaptive loading based on received signals, sends the adaptive loading information in a signaling field to the transmitter; and uses the calcuated adaptive loading in a data field of a transmitter data train.

Claim 23.    (previously presented)  The method according to claim 18, wherein a plurality of subcarriers is bundled into groups and the same modulation scheme is applied to all subcarriers belonging to the same group.

Claim 24.    (previously presented)  The method according to claim 23, wherein a plurality of adjacent subcarriers is bundled into one group.

Claim 25.    (currently amended)  A computer software program running on a wireless transmitting device for executing a wireless multicarrier transmission that uses n modulated frequency subcarriers (n is an integer number); a fading condition of each subcarrier is detected

-3-

00301987

to generate fading channel profile information; the program determines the modulation of each

subcarrier by performing the following steps:

precalculating a plurality of adaptive loading tables, each loading table containing

x subcarriers for modulation with a lower modulation scheme, y subcarriers for

modulation with a standard modulation scheme, and z subcarriers for modulation with a

higher modulation scheme (x, y, and z are integer numbers); wherein the sum of x, y, and

z is n and a resulting number of coded bits of a multicarrier symbol is constant;

selecting one of the adaptive loading tables for said multicarrier transmission; and

modulating the x subcarriers having low fading channel profile information with

the lower modulation scheme, modulating the y subcarriers having medium fading

channel profile information with the standard modulation scheme, and modulating the z

subcarriers having high fading channel profile information with the higher modulation

scheme.

Claim 26.     (currently amended) A wireless multicarrier transmission device for a

multicarrier transmission uses n modulated frequency subcarriers (n is an integer number),

comprising:

a fading channel profile unit for detecting a fading condition of each subcarrier;

an adaptive loading calculation unit for precalculating a plurality of adaptive

loading tables, each adaptive loading table containing x subcarriers for modulation with a

lower modulation scheme, y subcarriers for modulation with a standard modulation

scheme, and z subcarriers for modulation with a higher modulation scheme (x, y, and z

are integer numbers); wherein the sum of x, y, and z is n and a resulting number of coded

-4-

00301987

bits of a multicarrier symbol is constant;

selecting means for selecting one of the adaptive loading tables for said multicarrier transmission; and

an adaptive bits-to-symbol mapping unit for modulating the x subcarriers having low fading channel profile information with the lower modulation scheme, modulating the y subcarriers having medium fading channel profile information with the standard modulation scheme, and modulating the z subcarriers having high fading channel profile information with the higher modulation scheme.

Claim 27.      (previously presented)  The device according to claim 26, wherein the adaptive loading calculation unit bundles respectively a plurality of subcarriers into groups and applies the same modulation scheme to all subcarriers belonging to the same group.

Claim 28.      (previously presented)  The device according to claim 27, wherein the adaptive loading calculation unit bundles a plurality of adjacent subcarriers into one group.

00301987